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ABSTRACT

This guide contains 321 test items for use in teaching a course in repairing computer equipment. All test items were reviewed, revised, and validated by incumbent workers and subject matter instructors. Items are provided for assessing student achievement in the following skill areas (with selected skills mentioned in brackets): performing administrative functions (preparing service bills, maintaining accounts and labor records, training new employees, maintaining inventories, and calculating costs); maintaining customer service (answering and troubleshooting customer questions and demonstrating computer hardware and software); installing computer equipment (determining customer requirements, designing system layouts, transporting equipment, testing installations, and demonstrating systems on site); evaluating diagnostics (conducing various board, card, and line tests and interpreting diagnostic flowcharts); maintaining computer equipment (cleaning, lubricating, adjusting, and setting various components); and servicing computer equipment (interpreting various charts and schematics, installing and repairing various hardware, performing operator duties, and making adjustments). Each test item is designed to serve as an evaluation tool for use with Vocational-Technical Education Consortium of States (V-TECS) curriculum guides and is accompanied by a code that contains information about the duty area, task number, performance guide number, and learning domain area/level of the skill being evaluated in the item. (MN)

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Computer Equipment Repair

Test Item Bank

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V-TECS

VOCATIONAL—TECHNICAL EDUCATION CONSORTIUM OF STATES

CE045182

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V-TECS TEST ITEM BANK

FOR

COMPUTER EQUIPMENT REPAIR

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1986

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INTRODUCTION

V-TECS test item banks are designed to provide evaluation tools for use with V-TECS curriculum guides. Each test item bank consists of matching questions, multiple choice questions, and performance checklists. The test items and performance checklists are coded to identify the V-TECS curriculum guide's duty area, task number, performance guide (step) number, and learning domain area/level. A test item code of A-002-6-C1 identifies the following:

A = duty area

002 = task number

6 = performance guide (step) number

C1 = learning domain area/level

(C = cognitive learning domain area)

(1 = simple recall)

The duty areas composed of groups of related tasks performed by incumbent workers. The guides include enabling objectives, resources, teaching activities, criterion referenced measures, and performance steps. The performance steps specify the sequence of steps used to complete one particular task. The learning domains include cognitive, psychomotor, and affective areas. Each learning domain has multiple levels of learning:

Cognitive domain ---

C1 = simple recall

C2 = comprehension

C3 = application

C4 = analysis

C5 = synthesis

C6 = evaluation

Psychomotor domain ---

P1 = imitation

P2 = manipulation

P3 = precision

P4 = articulation

P5 = naturalization

Affective domain ---

A1 = receiving

A2 = responding

A3 = valuing

A4 = organizing

A5 = characterizing

The V-TECS test item banks are not designed to provide all possible test items. These test items were developed to include the essential (need to know) information as identified by the writing team and review team or instructors and incumbent workers. Test items can be omitted, changed or added at the discretion of the instructor.

The Computer Equipment Repair test items and Computerized Numerical Control test items were reviewed, revised, and validated by incumbent workers and subject matter instructors.

CER TEST ITEMS

Objective # 1
Task: Prepare service bill

Code: A-001-4-C1
1. The service bill provides the customer with the:
   A. history of the manufacturer.
   B. details of the sale/service.
   C. operating instructions.
   D. guidelines for buying or selling.
   ANSWER: B

Code: A-001-10-C1
2. A copy of the sales bill goes to the customer and the:
   A. I.R.S.
   B. manufacturer.
   C. supplier.
   D. dealer/service technician.
   ANSWER: D

Code: A-001-9-C1
3. The service bill should always be signed by the:
   A. customer.
   B. dealer/service technician.
   C. customer and dealer/service technician.
   D. manufacturer.
   ANSWER: C

Objective # 2
Task: Maintain accounts receivable/paid records

Code: A-002-4-C1
4. Accounts receivable/paid records are records of who:
   A. you owe money.
   B. owes you money.
   C. stock on hand.
   D. sold what merchandise/service.
   ANSWER: B

Code: A-002-1-C1
5. The three major parts of the accounts receivable records are the cash receipts journal, the accounts receivable ledger and the:
   A. inventory sheet.
   B. receiving report.
   C. sales receipt.
   D. sales journal.
   ANSWER: D

Code: A-002-3-C1
6. The record which keeps track of who has paid, how much has been paid and how much is still owed is called a:
   A. account receivable ledger.
   B. sales journal.
   C. cash receipts.
   D. receiving report.
   ANSWER: A

Objective # 3
Task: Perform public relations activities

Code: A-003-8-C1

7. The main reason for public relations is to promote:
   A. customer satisfaction.
   B. sales.
   C. friendliness.
   D. product satisfaction.
   ANSWER: B

Code: A-003-4-C1

8. Match the public relations material with its function:

Public Relation Material	Material Function
1. Promotional Give-a-way	a. Keeps customer up-to-date-on product/service cost.
2. Existing Product Updates	b. Keeps customer up-to-date-on any changes being made.
3. Price Change List	c. Provides customer with a local place to obtain repairs, & products.
4. Maintenance Newsletter	d. Allows dealers to stand behind their product or service, with tips, techniques, and answers to questions commonly asked.
5. Prospective Customer Mailing List	e. Provides a means of providing public relations materials to possible future customers.
6. Product Sales and Service Program	f. Introduces products/ services to customers by providing free samples.
	g. Keeps customer up-to-date on current product/service line.
	h. Provides a means of getting public relations materials to current customer.

ANSWERS: 1-f, 2-b, 3-a, 4-d, 5-e, 6-c.

Objective # 4
Task: Maintain labor records
Code: A-004-1-C1

9. The purpose of maintaining labor records is to keep track of:
   A. time spent on the job.
   B. payroll sheets.
   C. cost of labor.
   D. expenses.
   ANSWER: A

Code: A-004-2-C1

10. The two types of labor records normally kept are weekly and:
   A. monthly.
   B. daily.
   C. yearly.
   D. every 6 months.
   ANSWER: B

Objective # 5
Task: Train new service technicians
Code: A-005-3-A1

11. The key characteristic which should be stressed to a new service technician is:
   A. courtesy.
   B. speed.
   C. accuracy.
   D. neatness.
   ANSWER: A

Code: A-005-2-C1

12. The job of training the new technician concerning company policies, job duties, responsibilities, routines and procedures is usually given to the:
   A. manager.
   B. salesperson.
   C. service school instructor.
   D. trained service technician.
   ANSWER: D

Objective # 6
Task: Maintain receiving records
Code: A-006-2-C1

13. The purpose of a receiving report is to keep track of:
   A. shipped equipment.
   B. incoming parts, equipment, tools, etc.
   C. incoming finances.
   D. outstanding debts.
   ANSWER: B

Code: A-006-1-C1

14. When receiving and inspecting a shipment the technician should always compare the shipping invoice to the purchase order copy and report any inconsistencies or damage goods immediately to the:
   A. supervisor.
   B. salesperson.
   C. carrier.
   D. manufacturer.
   ANSWER: C

Code: A-006-2-C2

15. Given the following information match the receiving report location with its appropriate information.

MOCK INFORMATION

On May 10, 1986, the XYZ Company, Inc. received the following shipments. Using the information below, complete the receiving report worksheet provided below. Shipment # 1 - Invoice #764, dated April 16, 1986 from Parts Unlimited. John Henry received and inspected the shipment. John's purchase order showed they had ordered 6 disk drive belts at a cost of $22.00 each, but the shipment included only 5 disk drive belts.

XYZ Company, Inc.
6666 Nowhere Ave.
Anywhere, IL 00000

Receiving Report

Date	Vendor	Invoice Number	Invoice Date	Received By	Total Cost	Debit	Credit	Balance	Inconsistancies
1	2	3						4	5

a. 110.00
b. 22.00
c. 4/16
d. 5/10
e. parts unlimited
f. XYZ Company Inc.
g. -1 belt
h. 764

ANSWERS: 1-d, 2-e, 3-h, 4-a, 5-g

Objective # 7
Task: Establish customer files

Code: A-007-1-C1

16. A report which provides the technician with all pertinent customer information at a glance is called a:

A. inventory sheet.
B. equipment history file.
C. shipping record.
D. customer information file.

ANSWER: D

Code: A-007-2-C1

17. Match the credit terms with the best descriptor.

Credit term	Credit description
1. charge	a. exchange
2. warranty	b. checks/currency
3. cash	c. time payment
4. update	d. merchandise guarantee
5. maintenance contract	e. return
	f. modification/change
	g. agreement/understanding

ANSWER: 1-c, 2-d, 3-b, 4-f, 5-g

Objective # 8
Task: Maintain in-stock parts list

Code: A-008-8-C1
18. Which of the following is not a reason for maintaining an in-stock parts list?
A. Have parts on hand
B. Aids inventory control
C. Aids preparation of labor records
D. Identifies, locates and describes part
ANSWER: C

Code: A-008-4-C1
19. The main reason for maintaining a in-stock parts list is to avoid:
A. prepayment.
B. sales tax.
C. part depletion.
D. tax audit.
ANSWER: C

Objective # 9
Task: Order parts

Code: A-009-3-C1
20. Parts should be ordered as soon as what is reached?
A. Minimum supply
B. Ordering deadline
C. Lowest purchasing price
D. Requistion completion
ANSWER: A

Code: A-009-4-C1
21. What form is completed when placing a parts order?
A. Sales receipt
B. Shipping invoice
C. W-2 form
D. Purchase requistion
ANSWER: D

Objective # 10
Task: Maintain computer equipment inventory

Code: A-010-3-C1
22. A report which reflects levels of equipment on hand and a description of the equipment is called a:
A. equipment inventory.
B. parts inventory.
C. shipping report.
D. receiving report.
ANSWER: A

Code: A-010-1-C1
23. The equipment inventory description includes: equipment name, payment codes, cost and:
A. vendor name.
B. reorder number.
C. bin location.
D. sales tax.
ANSWER: B

Objective # 11
Task: Maintain records of service tools and equipment.

Code: A-011-2-C1
24. The main purpose of the service tool and equipment record is to provide accurate:
A. tracking of company tools and equipment.
B. depreciation of company tools and equipment.
C. assigning of tools and equipment.
D. payment for tools and equipment.
ANSWER: B

Code: A-011-1-C1
25. The service tool and equipment record should include date purchased, cost, identification number and:
A. current value.
B. projected expense.
C. expected life.
D. service contract.
ANSWER: C

Objective # 12
Task: Maintain shipping records.

Code: A-012-2-C1
26. A record of what was sent where is called a what record?
A. Receiving
B. Delivery
C. Inventory
D. Shipping
ANSWER: D

Code: A-012-2-A1
27. When a RUSH shipment is sent, the technician should always:
A. follow up on a delivery.
B. deliver it themselves.
C. charge extra.
D. send it 1st class parcel post.
ANSWER: A

Objective # 13
Task: Prepare items for shipping.

Code: A-013-2-C1
28. When shipping computer equipment, the technician should place the equipment in what kind of container?
A. Slightly undersized
B. Metal crush proof with packing material
C. Larger with shock proof packing material
D. Original
ANSWER: C

Code: A-013-4-C1
29. Freight forms should be completed in triplicate, a copy for the customer, dealer and:
A. I.R.S.
B. manager.
C. freight company.
D. insurance company.
ANSWER: C

Objective # 14
Task: Update service manuals.

Code: A-014-2-A1
30. When updating service manuals, the old pages should be filed or:
A. discarded.
B. left in manual.
C. given to supervisor.
D. sent back to manufacturer.
ANSWER: A

Code: A-014-1-C1
31. Enclosed with service manual updates are update:
A. cost.
B. time estimate.
C. explanation.
D. instructions.
ANSWER: D

Objective # 15
Task: Maintain call report record.

Code: A-015-2-C1
32. The purpose of the service call report is to:
A. keep tabs on the technician.
B. provide documentation of service performed.
C. keep management happy.
D. waste the technician's time.
ANSWER: B

Code: A-015-1-C1
33. The three most common types of service calls are problem, warrenty and:
A. maintenance contract.
B. public relations.
C. field update.
D. no charge.
ANSWER: A

Objective # 16
Task: Conduct representative meetings.

Code: A-016-1-C1
34. The "bible" for parlimentary procedures is:
A. technical service manual.
B. company policy book.
C. Robert's Rules of Order.
D. Henry's Rules of order.
ANSWER: C

Code: A-016-3-A1
35. The main reason for conducting service representation meetings is to:
A. gossip about management.
B. stay abreast of service field.
C. get a day away from servicing.
D. find new job prospects.
ANSWER: B

Objective # 17
Task: Establish customer and equipment history files.

Code: A-017-1-C1
36. A record which provides current, readily available customer and equipment information, is called a:
A. equipment inventory.
B. customer/equipment history file.
C. inventory.
D. account receivable records.
ANSWER: B

Code: A-017-1-C1
37. Equipment information in customer/equipment history file includes engineering updates, service agreement, machine status, installation date, model/style number and:
A. serial number.
B. account number.
C. owner's name.
D. equipment location.
ANSWER: A

Objective # 18
Task: Calculate equipment repair costs.

Code: A-018-1-C1
38. Total equipment repair cost includes labor, parts, travel and:
A. salesman commisson.
B. dealer profit.
C. taxes.
D. advertizing.
ANSWER: C

Code: A-018-4-C1
39. In some cases there is no charge for a repair, these repairs are warranty, maintenance contract, and:
A. recall.
B. upgrade.
C. system change.
D. public relations.
ANSWER: A

Objective # 19
Task: Calculate systems installation costs.

Code: A-019-11-C1
40. The purpose of calculating system installation cost is to provide a:
A. final customer cost.
B. estimate of customer cost.
C. estimate of dealer profit.
D. final dealer cost.
ANSWER: B

Code: A-019-12-A1

41. A system installation estimate form should be signed, dated and provide a:
    A. rebate.
    B. discount for prepayment.
    C. manager's signature.
    D. expiration date.
    ANSWER: D

Objective # 20
Task: Update on-site maintenance log.

Code: A-020-1-C1

42. The purpose of a on-site maintenance log is to provide a record of:
    A. future maintenance.
    B. previous maintenance.
    C. owner information.
    D. billing charges.
    ANSWER: B

Code: A-020-4-A1

43. The on-site maintenance log should be updated how often?
    A. Daily
    B. Weekly
    C. Immediately after service
    D. After major repairs
    ANSWER: C

Objective # 21
Task: Answer customer questions.

Code: B-001-1-A1

44. The first thing the technician should do when a customer enters is:
    A. inquire about the nature of the problem.
    B. have them take a number.
    C. tell them you will be with them in a moment.
    D. greet them cordially.
    ANSWER: D

Code: B-001-1-A1

45. The key to customer satisfaction is:
    A. low prices.
    B. advertizing.
    C. courtesy.
    D. rebates.
    ANSWER: C

Objective # 22
Task: Trouble shooting customer problems.

Code: B-002-1-A1

46. Troubleshooting minor customer problems is often considered a part of:
    A. public relations.
    B. management duties.
    C. chargeable services.
    D. down time.
    ANSWER: A

Code: B-002-2-C1

47. Which of the following is not considered a source for troubleshooting information:
    A. troubleshooting charts.
    B. service manuals and books.
    C. other technicians.
    D. company manager.
    ANSWER: D

Objective # 23
Task: Determine repair method.

Code: B-003-3-A1

48. The repair method the technician chooses should be the most thorough and:
    A. costly.
    B. efficient.
    C. lengthy.
    D. expensive.
    ANSWER: B

Code: B-003-2-C1

49. The first step in determining a repair method is to:
    A. obtain repair components.
    B. determine cost of repair.
    C. determine cause of customer problems.
    D. decide repairs steps.
    ANSWER: C

Objective # 24
Task: Demonstrate computer equipment function at store.

Code: B-004-6-A1

50. The purpose of demonstrating computer equipment functions at the store is to:
    A. pressure customer into a sale.
    B. help customer determine computer needs.
    C. make as large of profit as possible.
    D. make a software sale.
    ANSWER: B

Code: B-004-13-C1

51. A vital part of a successful in-store computer equipment demonstration is:
    A. hands-on customer participation.
    B. lots of software.
    C. different types of equipment.
    D. several hours of demonstration.
    ANSWER: A

Objective # 25
Task: Demonstrate software functions.

Code: B-005-3-C1

52. An integral part of software demonstration is:
    A. a large group of participants.
    B. complete, user friendly documentation.
    C. software cost.
    D. software warranty.
    ANSWER: B

Code: B-005-1-A1
53. The main component that a software function demonstration should be built around is:
A. available equipment.
B. software documentation.
C. computer memory.
D. customer needs.
ANSWER: D

Objective # 26
Task: Determine customer requirement

Code: C-001-1-C1
54. When determining customer system requirements, it is hepful for the technician to:
A. look at other systems.
B. create a system layout.
C. talk to supervisor.
D. determine service contract.
ANSWER: B

Code: C-001-2-C1
55. When determining requirements. the technician should include warrenties, service contracts, computer equipment and:
A. furniture.
B. building specifications.
C. total costs.
D. software.
ANSWER: D

Objective # 27
Task: Design system layout

Code: C-002-1-C1
56. A graphic depiction of the system requirements, equipment, workflow, arrangement, ect., is called a system:
A. picture.
B. map.
C. layout.
D. schematic.
ANSWER: C

Code: C-002-2-A1
57. When designing a system layout. the technician should consider work space, space utilized and:
A. safety.
B. cost.
C. company size.
D. software.
ANSWER: A

Objective # 28
Task: Transport equipment

Code: C-003-1-C1
58. Examples of computer equipment external preparation are anti-static bags, shock absorbent packing material and:
A. shredded paper.
B. shag rug.
C. styrofoam blocks.
D. wood blocks.
ANSWER: C

Code: C-003-3-A1
59. When transporting a disk drive, it is important to inseert a:
A. floppy disk.
B. head support disk.
C. periperal cable.
D. packing slip.
ANSWER: A

Objective # 29
Task: Set up equipment

Code: C-004-2-C1
60. When setting up computer equipment at the customer site, the technician should follow the:
A. secretary's instruction.
B. system layout.
C. DOS manual.
D. company policy book.
ANSWER: B

Code: C-004-4-A1
61. After completing a computer equipment set-up, what should the technician check before powering up?
A. Customer satisifaction
B. Manufacturer's electrical specification
C. Administrative approval
D. Aesthetic appeal
ANSWER: B

Objective # 30
Task: Perform installation tests

Code: C-005-1-A1
62. Installation tests should be performed by the:
A. operator.
B. electrician who installed the wiring.
C. service technician.
D. person who sold the equipment.
ANSWER: C

Code: C-005-3-A1

63. The main purpose of performing installation tests are to:
    A. keep the customer happy.
    B. give the technician a sense of accomplishment.
    C. meet federal regulation.
    D. insure the equipment functions correctly.
    ANSWER: D

Objective # 31
Task: Demonstrate usage of system on site

Code: C-006-1-A1

64. The purpose of an on-site demonstration is to familiarize:
    A. technician with operational procedures.
    B. operator with operational procedures.
    C. operator with repair procedures.
    D. technician with repair procedures.
    ANSWER: B

Code: C-006-6-A1

65. The key to the success of an on-site demonstration is:
    A. number of participants.
    B. type of machine demonstrated.
    C. hands-on participation.
    D. type of software demonstrated.
    ANSWER: C

Objective # 32
Task: Complete warranty card

Code: C-007-2-C1

66. Which of the following is <u>not</u> important information for a warranty card?
    A. Model number/make and serial number
    B. Purchase date
    C. Seller's signature
    D. type of warranty and length
    ANSWER: C

Code: C-007-3-C1

67. After completing a warranty card it should be sent immediately to the:
    A. manufacturer.
    B. customer.
    C. boss.
    D. dealer.
    ANSWER: A

Objective # 33
Task: Construct cables

Code: C-008-1-C1

68. The two most common types of peripheral cables are cord and:
    A. wire.
    B. ribbon.
    C. round.
    D. multi-cord.
    ANSWER: B

Code: C-008-3-C1

69. The three basic wiring configurations used for constructing cables are pin, jack, and:
    A. prong.
    B. cord.
    C. card.
    D. screw.
    ANSWER: C

Objective # 34
Task: Conduct motherboard RAM (random access memory) test

Code: D-001-3-C2

70. If a customer complained about the system not running a certain program, and a known good copy of the program did not work the technician should run which test:
    A. motherboard ROM test.
    B. motherboard RAM test.
    C. disk drive test.
    D. keyboard test.
    ANSWER: B

Code: D-001-4-C1

71. The motherboard RAM test checks what memory?
    A. Permanent
    B. Bubble
    C. Expansion
    D. Temporary
    ANSWER: D

Objective # 35
Task: Conduct motherboard ROM (read only memory) test

Code: D-002-3-C2

72. If the customer complained the system had trouble running BASIC the technician would perform which test?
    A. Motherboard ROM
    B. Motherboard RAM
    C. Keyboard
    D. Disk drive
    ANSWER: A

Code: D-002-4-C1

73. The permanent memory in a computer is called:
    A. ROM.
    B. RAM.
    C. expansion.
    D. bubble.
    ANSWER: A

Objective # 36
Task: Conduct programmers aid test

Code: D-003-5-C1
74. The prorammers aid test must be observed in:
A. BASIC.
B. graphic mode.
C. operation.
D. calculate mode.
ANSWER: C

Objective # 37
Task: Conduct keyboard test

Code: D-004-C2
75. If the customer complained about missing characters when entering data, commands or text the technician would check which test?
A. Keyswitch test
B. Keyboard test
C. Motherboard RAM test
D. Oscilloscope test
ANSWER: B

Code: D-004-5-C1
76. When a keyboard problem is reported, before running any tests, the technician should:
A. replace the keyboard.
B. replace the ROM I.C. chip.
C. clean the keyswitch.
D. Unplug and replug keyboard.
ANSWER: D

Objective # 38
Task: Conduct Game Paddle/Button test

Code: D-005-3-C2
77. If a customer indicated that his paddles weren't working correctly the technician would run what test?
A. Integer ROM card
B. Oscilloscope
C. Graphics card
D. Game paddle/button
ANSWER: D

Code: D-005-5-C1
78. If any part of the paddle/game test fails the technician should:
A. run the test again.
B. repair the paddle.
C. replace the paddle.
D. try a different computer.
ANSWER: C

Objective # 39
Task: Conduct tape read/write/verify test

Code: D-006-5-C2
79. If a customer indicated that his tape recorder would not save or read from a tape the technician would run what test?
A. Tape read/write/verify
B. Tape speed
C. Oscilloscope
D. Tape audio
ANSWER: A

Code: D-006-7-C1
80. If a technician wanted to "calibrate" a tape recorder to work with a specific system what test would be used?
A. Keyboard
B. Tape speed
C. Programmers aid
D. Tape read/write/verify
ANSWER: D

Objective # 40
Task: Conduct color bar test

Code: D-007-3-C2
81. If a customer was experiencing display problems the technician would run what test?
A. Graphics tablet
B. RF modulator
C. Color-bar test
D. Voltmeter
ANSWER: C

Code: D-007-4-C1
82. The color bar test allows the technician to check the video cable, video generating circuitry and the:
A. display device.
B. graphics tablet.
C. language card.
D. printer card.
ANSWER: A

Objective # 41
Task: Conduct graphic tablet test

Code: D-008-4-C2
83. If a customer was having problems with a graphic tablet or pen what test should be ran?
A. Graphic tablet
B. Graphic display
C. Monitor
D. Keyboard
ANSWER: A

Code: D-008-10-C1

84. If the graphic test fails the technician should:
    A. replace graphic interface card.
    B. replace ROM on graphic card.
    C. try another graphic table or pen.
    D. try another computer.
    ANSWER: C

Objective # 42
Task: Conduct basic/integer card test

Code: D-009-1-C1

85. If the customer indicated problems running programs in the type of basic contained on the firmware, the technician would run what test?
    A. Machine language card
    B. Basic/integer card
    C. RAM card test
    D. Logic probe
    ANSWER: B

Objective # 43
Task: Conduct language card test

Code: D-010-1-C1

86. An algebraic procedure-oriented computer language designed to solve arithmetic and logical problems is called:
    A. COBOL.
    B. PASCAL.
    C. LOGO.
    D. FORTRAN.
    ANSWER: D

Code: D-010-4-C2

87. If a customer complained about loading or running programs which use different languages such as PASCAL, LOGO, FORTRAN, etc. the technician should use what test?
    A. Language card
    B. Integer/Basic ROM card
    C. Disk interface card
    D. Serial/communictions card
    ANSWER: A

Objective # 44
Task: Conduct disk interface card test

Code: D-011-4-C2

88. The technician would run this test if the customer was having problems saving or loading programs from a diskette.
    A. Integer/Basic card
    B. Motherboard RAM
    C. Disk interface card
    D. Data communication line test
    ANSWER: C

Code: D-011-7-C1

89. If the disk interface test fails, the first thing the technician should do is:
    A. replace disk interface card.
    B. replace PROM on disk interface card.
    C. run test again.
    D. change disk drives.
    ANSWER: B

Objective # 45
Task: Conduct printer card test (parallel)

Code: D-012-4-C2

90. If a customer was having parallel printer operational problems, the technician would run what test?
    A. Printer card
    B. Serial/communication card
    C. Printer self-test
    D. Language card
    ANSWER: A

Code: D-012-1-C1

91. If a customer was having character printing problems, the technician might run what test?
    A. Printer card
    B. Serial/communication card
    C. Printer self-test
    D. Language card
    ANSWER: C

Objective # 46
Task: Conduct serial/communications card test

Code: D-013-7-C2

92. If a customer was having problems with the operation of a modem, the technician would run what test?
    A. Motherboard RAM
    B. Printer interface card
    C. Communication interface card
    D. Serial interface card
    ANSWER: C

Code: D-013-5-C2

93. If a customer has problems with the operation of a serial printer, the technician would run what test?
    A. Motherboard ROM
    B. Keyboard
    C. Communication interface card
    D. Serial interface card
    ANSWER: D

Objective # 47
Task: Conduct monitor test

Code: D-014-4-C1
94. The monitor case/cover should be removed only by a trained service technician because it contains:
A. static sensitive components.
B. lethal radiation.
C. fragile component.
D. lethal voltage.
ANSWER: D

Code: D-014-9-C1
95. If a monitor has an annoying color tint or "jitter" on the fringe or boarder of display, the technician should:
A. adjust color trimmer variable resistor.
B. check for malfunctioning video interface chip.
C. check for malfunctioning video transistor.
D. adjust vertical or horizontal synchronization.
ANSWER: A

Objective # 48
Task: Conduct oscilloscope test

Code: D-015-2-C1
96. The vertical and timing setting for an oscilloscope test is usually how many millivolts and milliseconds?
A. 20, 50
B. 50, 10
C. 50, 20
D. 10, 50
ANSWER: C

Code: D-015-5-C1
97. The typical oscilloscope has a horizontal frequency range of about how many kHz?
A. 10
B. 50
C. 75
D. 100
ANSWER: D

Code: D-015-6-C1
98. An oscilloscope picture that appears when the signal under test has a much higher frequency than the scope internal horizontal frequency is called a:
A. trace.
B. envelope.
C. pulse.
D. node.
ANSWER: B

Objective # 49
Task: Conduct data communication line test

Code: D-016-3-C1
99. The modem connector can be checked for a signal by using a:
A. oscilloscope.
B. logic pulse.
C. logic probe.
D. voltmeter.
ANSWER: D

Code: D-016-5-C1
100. A modem signal is transmitted via a:
A. telephone line.
B. satellite.
C. radio waves.
D. video cables.
ANSWER: A

Objective # 50
Task: Interpret diagnostic flowcharts

Code: D-017-1-C1
101. A logical step by step listing of checkpoints which helps determine probable causes of failure is called a:
A. schematic.
B. diagnostic flowchart.
C. chip swapping chart.
D. service manual.
ANSWER: B

Code: D-017-2-C1
102. Troubleshooting using a diagnostic flowchart should begin where?
A. Point of failure
B. Convenient place
C. The midpoint
D. Box 1
ANSWER: D

Objective # 51
Task: Clean metallic parts

Code: E-001-4-C1
103. Metallic parts should be cleaned with a soft, clean cloth moistened with:
A. rubbing alcohol.
B. water.
C. soapy water.
D. denatured alcohol.
ANSWER: D

Code: E-001-7-C1
104. A good applicator for extremely small amounts of oil, such as required in a disk drive, is a:
A. squirt oil can.
B. syringe with injection needle.
C. spray can lubricant.
D. cotton swabs.
ANSWER: B

Objective # 52
Task: Clean non-metallic parts

Code: E-002-4-C1
105. Non-metallic parts should be cleaned with:
A. high residue cleaners.
B. low residue cleaners.
C. soap and water.
D. strong degreasing agent.
ANSWER: B

Code: E-002-4-C1
106. Rubber parts, such as platens, guide rollers, etc., should be cleaned with:
A. solvent.
B. soap.
C. high residue spray.
D. rubber cleaner.
ANSWER: D

Objective # 53
Task: Clean electrical connections

Code: E-003-4-C1
107. Three types of corrosion which affect electrical connections are direct oxidation, atmospheric, and:
A. acid.
B. chemical.
C. galvanic.
D. rust.
ANSWER: C

Code: E-003-2-C1
108. When the metal plating on a pin or connector is touched with fingers, what remains causing corrosion?
A. An oil film
B. Sodium chloride residue
C. Grease residue
D. Dirt and grime
ANSWER: B

Objective # 54
Task: Clean cable connections
Code: E-004-2-C1
109. When rubbing to clean cables connectors, always rub the pin or contact
A. in a circular motion.
B. side to side.
C. lengthwise.
D. diagonally.
ANSWER: C

Code: E-004-7-C1
110. The most durable and reliable connector plating is a thin coating of:
A. gold.
B. tin.
C. silver.
D. copper.
ANSWER: A

Objective # 55
Task: Clean printer head

Code: E-005-2-C1
111. The major danger when cleaning a dot matrix printer head is:
A. blowing an I.C. chip.
B. shorting an electrical circuit.
C. bending a print wire.
D. breaking a print arm.
ANSWER: C

Code: E-005-2-C1
112. The most common cause of partially printed letters with a daisy wheel is a:
A. build-up of paper dust and ink.
B. broken print arm.
C. faulty printer interface card.
D. faulty print hammer.
ANSWER: A

Objective # 56
Task: Clean disk drive head

Code: E-006-A4-C1
113. The disk drive head should be cleaned with what percent denatured alcohol?
A. 50 - 60
B. 60 - 70
C. 70 - 80
D. 80 - 90
ANSWER: D

Code: E-006-B5-C1
114. A useful rule of thumb for cleaning the read/write head is to clean it every:
A. 40 man hours.
B. 40 rotational hours.
C. when you get read/write errors.
D. 4 weeks.
ANSWER: B

Code: E-006-B4-C1
115. When using a cleaning disk, the drive should not be allowed to spin for more than:
A. 10 seconds.
B. 30 seconds.
C. 60 seconds.
D. 120 seconds.
ANSWER: B

Objective # 57
Task: Clean and demagnetize tape head

Code: E-007-2-C2
116. Which of the following should <u>not</u> be used to clean a tape head?
A. Isopropyl alcohol
B. 90% denatured alcohol
C. 70% alcohol
D. Trichloroethane
ANSWER: C

Code: E-007-5-C1
117. The two most common types of head demagnetizers are battery-powered and:
A. AC powered.
B. DC powered.
C. floppy diskette.
D. drop-in cassette.
ANSWER: D

Objective # 58
Task: Lubricate metallic mechanical parts

Code: E-008-2A-C1
118. Which of the following metallic mechanical parts should not be greased?
A. Gears
B. Rotating cams
C. Bearings
D. Sliding parts
ANSWER: C

Code: E-008-1-C1
119. The most important piece of computer equipment when it comes to lubrication is the:
A. central processing unit.
B. monitor.
C. disk drive.
D. printer.
ANSWER: D

Objective # 59
Task: Lubricate non-metalic parts.

Code: E-009-1-C1
120. EMI/RFI shields protect:
A. operator personnel from stray radiation.
B. stored CMOS parts from static charge.
C. other electronic equipment from both power line and radiated interference.
D. data transmission lines from glitches.
ANSWER: B

Code: E-009-1-C1
121. Your best source of lubrication points and schedule is:
A. lubrication labels.
B. operators manual.
C. maintenance manual.
D. observation.
ANSWER: C

Code: E-009-5-C1
122. You should remove excess lubrication with:
A. soft bristle brush.
B. common cotton swab.
C. cotton swab moistened in alcohol.
D. lintless cloth.
ANSWER: D

Objective # 60
Task: Adjust mechanical assemblies.

Code: E-010-2E-C1
123. Belt tracking adjustments are usually part of:
A. drive motor adjustments.
B. drive motor and clutch adjustments.
C. spring tension adjustments.
D. belt tension adjustments.
ANSWER: D

Code: E-010-3-C1
124. Penetration adjustments adjust for:
A. tractor feed pin penetrations.
B. top-of-form settings.
C. worn printer ribbons.
D. worn platens.
E. worn and dirty print mechanism.
ANSWER: D

Code: E-010-1-C1
125. Alignment and adjustment tools are:
A. identified in the operators manual.
B. common repair tools.
C. identified by part number in the maintenance manual.
D. locally fabricated.
ANSWER: B

Code: E-010-3-C1
126. Interdependent adjustments:
A. must be accomplished in the prescribed order.
B. are accomplished when replacing parts.
C. are accomplished at the factory.
D. are accomplished at authorized service centers.
ANSWER: A

Code: E-010-4-C1
127. Reassembly instructions are normally.
A. in more detail than disassembly instructions.
B. shown in exploded view line drawings.
C. left to your discretion.
D. a statement to reassemble in reverse order.
ANSWER: D

Objective # 61
Task: Adjust and align disk drive head.

Code: E-011-1-C1
128. Good quality diagnostic disks and adjustment procedures can be obtained from:
A. the manufacturer only.
B. maintenance contracts.
C. third party sources and some manufacturers.
D. computer clubs.
ANSWER: C

Code: E-011-6-C1
129. Disk format and disk drive logic:
A. is defined by the manufacturer for all equipment with the same model number.
B. is defined by the manufacturers using D.O.S.-V numbers.
C. is the same for all 5 1/4" soft sectored disks.
D. is not important in disk drive alignments and adjustments.
ANSWER: B

Code: E-011-3A-C1
130. The most used oscilloscope disk drive test tract is called:
A. the Cat's Eye Pattern.
B. the Butterworth Response.
C. the Lisajou Pattern.
D. the Barkhousen Response.
ANSWER: A

Objective # 62
Task: Adjust and align tape head

Code: E-012-2C-C1
131. Why are coaxial cables used for computer audio and video signals?
A. To increase noise-to-signal ratio
B. Because they match RCA pin plugs
C. To provide multiplex capability
D. Because the center conductor is shielded from external interference
ANSWER: D

Code: E-012-2A-C1

132. What does Azimuth and Zenith adjustments insure?

A. The tape head is perpendicular and at the correct height to the tape travel
B. The head air-gap is at saturation position
C. The tape travel is perpendicular to the tape transport base.
D. The record bias oscillator does not overlap the play head

ANSWER: A

Objective # 63

Task: Set disk read/write/verify speed.

Code: E-013-3A3-C1

133. The disk drive motor speed adjusting potentiometer:

A. is located on the motor end bell assembly.
B. is normally a 10-turn potentiometer.
C. is usually a trimmer pot.
D. is located on the controller cord.

ANSWER: B

Code: E-013-3A1-C1

134. The purpose of the strobe pattern is:

A. to indicate the correct motor mounting position.
B. to indicate track "0".
C. to facilitate the manual drive motor speed adjustment.
D. to indicate the excessive motor wear.

ANSWER: C

Code: E-013-3A2-C1

135. How can you fabricate a shop strobe light for a drive motor speed adjustment?

A. Use a NEZ or NE51 lamp
B. Use a type 47 or type 49 lamp
C. Use a PR 3 or PR 4 lamp
D. Use a 7 segment diode

ANSWER: A

Code: E-013-3A4-C1

136. When the disk drive motor speed is correct:

A. the inner strobe pattern merges with the outside strobe pattern.
B. the spokes on the strobe appear to rotate counter clockwise.
C. the spokes on the strobe appear to rotate clockwise.
D. the spokes on the strobe appear stationary.

ANSWER: D

Code: E-013-3A1-C1
137. What are the two strobe patterns on the disk drive motor pulley for?
A. Adjusting for a 13 sector or 16 sector disk
B. Sixty hertz or fifty hertz AC power sources
C. The Kansas City or tarbell interface
D. Single density or double density disks
ANSWER: B

Code: E-013-3B1-C1
138. When using a diagnostic disk for disk drive motor speed adjustment:
A. your indicator is the disk-drive activity light.
B. your indicator is a strobe type light.
C. your indicator is the computer monitor.
D. your indicator is a frequency counter.
ANSWER: C

Objective # 64
Task: Set tape read/write/verify speed

Code: E-014-3-C1
139. What is the best way to determine if the tape transport speed is correct?
A. Monitor the motor speed with a missing pulse detector
B. Play a song you know
C. Play a computer tape
D. Monitor the motor speed using a tachometer/ generator
ANSWER: B

Code: E-014-4-C1
140. If the motor speed is adjustable the adjustment is usually located:
A. inside one end of the motor.
B. on the motor drive board.
C. on the servo drive board.
D. on the side of the memory housing.
ANSWER: B

Code: E-014-5-C1
141. When a tape transport is in equilibrium:
A. loose tape is in the cassette.
B. the transport drive belt is old and should be replaced.
C. the take-up spindle and supply spindle have the correct speed ratio for all conditions.
D. the take-up spindle and supply spindle are in the direct driven mode.
ANSWER: C

Code: E-014-2-C1

142. The accessibility of the tape transport clutch determines:
   A. the type of adjusting tool needed.
   B. if adjustments can be made with the tape operating (playing).
   C. if dummy plug must be used during the adjustment.
   D. if the adjustment must be made by the factory.
   ANSWER: B

Objective # 65
Task: Clean or replace filters

Code: E-015-2A-C1

143. You should replace an equipment filter:
   A. when the filter surface is matted and the mesh is not symmetrical.
   B. when the equipment runs hot.
   C. every 90 days.
   D. When dust or dirt is visible on finger guards or filter holder.
   ANSWER: C

Code: E-015-B1-C1

144. You should clean equipment filters using:
   A. air pressure of 80PSI or less.
   B. carbon tetrachloride.
   C. denatured alcohol.
   D. warm water and mild detergent or a mild cleaning solution.
   ANSWER: D

Objective # 66
Task: Clean outside case/cover.

Code: E-016-1-C1

145. When cleaning a case/cover the first thing is to:
   A. remove all detachable parts.
   B. disconnect the power cord.
   C. Wipe away excess dust and dirt.
   D. Scrub with lots of warm water and detergent.
   ANSWER: B

Code: E-016-2-C1

146. The best way to avoid unnecessary dust build up on idle computer equipment is to use:
   A. anti-dust spray.
   B. clean daily.
   C. clean regularly.
   D. use dust covers.
   ANSWER: D

Code: E-016-4-C1
147. The most common cause of I.C. chip malfunctions are related to:
A. dampness.
B. cool air.
C. dust build-up.
D. dry air.
ANSWER: C

Objective # 67
Task: Interpret trouble shooting charts.

Code: F-001-3-C1
148. The main purpose of the troubleshooting chart is to:
A. narrow the area of initial testing.
B. give quick, extermely accurate solution.
C. provide a quick answer for the customer.
D. give the technician something to read.
ANSWER: A

Code: F-001-2-C1
149. A chart which provides a listing of possible causes and suggested checks or tests is called what kind of chart?
A. Chip swapping
B. Base diagram
C. Schematic
D. Troubleshooting
ANSWER: D

Objective # 68
Task: Interpret ship swapping chart.

Code: F-002-1-C1
150. A chart which lists chips and common problems and locations is called a chip:
A. component chart.
B. swapping chart.
C. identified chart.
D. location chart.
ANSWER: B

Code: F-002-1-C1
151. The first step in using a chip swapping chart is to identify the:
A. problem or complaint.
B. faulty chip.
C. chip location.
D. replacement chip.
ANSWER: A

Objective # 69
Task: Interpret schematics.

Code: F-003-2-C1
152. A document which comes with a piece of equipment identifing the order of operation of circuits, interrelation of parts, flow of power, and logic of construction is called a:
A. warrenty.
B. service contract.
C. schematic.
D. user manual.
ANSWER: C

Code: F-003-3-C1
153. A schematic is a helpful tool when a technician is trying too:
A. isolate a faulty component.
B. ordering new parts.
C. identifying component manufactures.
D. explaining problems to customer.
ANSWER: A

Objective # 70
Task: Interpret manufacturing upgrade.

Code: F-004-3-C1
154. A manufacturing upgrade is usually due to a design change:
A. during production.
B. before production.
C. during designing.
D. after distribution.
ANSWER:

Code: F-004-4-A1
155. All manufacturing upgrades should be recorded immediately in the:
A. owners manual.
B. daily service call records.
C. technicians note book.
D. equipment history file.
ANSWER: D

Objective # 71
Task: Remove and install cover.

Code: F-005-2-C1
156. When removing the cover from a piece of computer equipment, the first thing the technician should do is:
A. disconnect the power cord.
B. remove retaining screws.
C. locate retaining screws.
D. disconnect peripheral cables.
ANSWER: A

Code: F-005-6-C1
157. When removing the equipment cover, all wires and cables should be:
A. removed randomly.
B. removed systematicly.
C. marked and diagrammed.
D. left attached to cover.
ANSWER: C

Objective # 72
Task: Install keyboard.

Code: F-006-1-C1
158. The interface between the computer and the operator is called the:
A. CPU.
B. keyboard.
C. modem.
D. monitor.
ANSWER: B

Code: F-006-5-C1
159. Intermittent, erratic keyboard operation is usually the result of:
A. faulty I.C. chips.
B. power spikes and surges.
C. bad cable connection.
D. operator error.
ANSWER: C

Code: F-006-3-C1
160. After removing the keyboard, it should be placed on a:
A. soft, fluffy rug.
B. hard, flat surface.
C. anti-static support pad.
D. curved surface.
ANSWER: C

Objective # 73
Task: Install motherboard.

Code: F-007-3-C1
161. Another common name for a motherboard is what kind of board?
A. Main component
B. Analog
C. Logic
D. Printed circuit
ANSWER: D

Code: F-007-7-C1
162. One of the worst enemies of the motherboard is:
A. dry air.
B. wet hands.
C. static electricity.
D. radio frequency interference.
ANSWER: C

Code: F-007-7-C1
163. What is most likely to occur if the motherboard contact pins are touched by fingers?
A. static discharge.
B. galvanic corrosion.
C. magnetism.
D. broken pins.
ANSWER: B

Objective # 74
Task: Install power supply.

Code: F-008-1-C1
164. A power supply should be removed and replaced by the
A. owner.
B. service technician.
C. operator.
D. anybody.
ANSWER: B

Code: F-008-2-C1
165. At any one time a power supply contains how many volts?
A. 1
B. 117
C. 500
D. 15,000
ANSWER: B

Objective # 75
Task: Install analog board

Code: F-009-6-C1
166. A device that sets up a mathematical analogy of a problem is called the:
A. analog board.
B. digital board.
C. memory expansion board.
D. language card board.
ANSWER: A

Code: F-009-10-C1
167. The centerpiece in the converting of digital to analog is the:
A. comparator.
B. clock.
C. counter register.
D. D/A circuit.
ANSWER: D

Code: F-009-3-C1
168. An analog board/card is most commonly located in the:
A. disk drive.
B. printer.
C. monitor.
D. modem.
ANSWER: A

Objective # 76
Task: Install disk drive assembly.

Code: F-010-6-C1
169. Disk drive assemblies are easier to replace for a drive unit that is:
A. on-board.
B. stand alone.
C. part of keyboard.
D. built into the CPU case.
ANSWER: B

Code: F-010-8-C1
170. If the drive motor runs, but the disk drive assembly does not work the first thing to check is:
A. cable or cable connectors.
B. control circuits.
C. drive belt.
D. lead load pads.
ANSWER: C

Code: F-010-12-C1
171. If a drive will not read from a disk that was formatted on another disk drive, the problem is probably:
A. head out of alignment.
B. motor speed incorrect.
C. bad diskette.
D. bad analog board.
ANSWER: A

Objective # 77
Task: Install main logic assembly.

Code: F-011-3-C1
172. Before removing the main logic assembly the technician should remove all:
A. peripheral cards.
B. retaining screws.
C. cables.
D. memory boards.
ANSWER: A

Code: F-011-8-C1
173. Why is it important not to touch the access panel with the main logic board?
A. Break components
B. Loosen connectors
C. Short I.C. chips
D. Corode pin connectors
ANSWER: C

Objective # 78
Task: Install integrated circuit chips.

Code: F-012-A5-C1
174. When removing an integrated circuit chip what should be used?
A. Fingers
B. I.C. extractor tool
C. Screwdriver
D. Tweaker
ANSWER: B

Code: F-012-A9-C1
175. When inserting a I.C. chip, place the chip over the socket and:
A. align both rows of pins simultaneous.
B. force chip into socket.
C. align one row of pins at a time.
D. offset chip over socket by 1 pin.
ANSWER: C

Code: F-012-B4-C1
176. When looking down on the chip pin #1 is located where in relationship to the notch/groove on the end of the I.C. chip?
A. Top
B. Bottom
C. Right
D. Left
ANSWER: D

Code: F-012-B14-C1
177. Once the I.C. chip is aligned correctly in the socket, the chip should be pressed down using a:
A. screwdriver.
B. finger.
C. chip inserter.
D. another chip.
ANSWER: C

Code: F-012-5-C1
178. When removing a soldered I.C. chip it is important to:
A. scrape melted solder to one side.
B. suck up or sponge up melted solder.
C. let the melted solder drip thru pin hole.
D. use as much heat as possible.
ANSWER: B

Objective # 79
Task: Install power light

Code: F-013-4-C1
179. When the power indicator light is an LED it is replaced with a:
A. screw based bulb.
B. light emmitting diode.
C. bayonet pronged bulb.
D. light emmitting device.
ANSWER: B

Code: F-013-1-C1
180. The main purpose of the power indicator light is to:
A. indicate presence of power.
B. remind operator to power down.
C. asetic value.
D. drain excess voltage from chips.
ANSWER: A

Code: F-013-5-C1
181. When replacing a power light always check the socket or connecting wires for:
A. grease.
B. dampness.
C. power.
D. corrosion.
ANSWER: D

Objective # 80
Task: Install on-off switch

Code: F-014-4-C1
182. The most common type of on-off switch on computer equipment is what type of switch?
A. Push-button
B. Toggle
C. Rocker
D. Lit push button
ANSWER: C

Code: F-014-3-C1
183. What must be removed first before most on-off switches can be installed?
A. Retaining latch
B. Cover/case
C. Switch connector
D. Internal components
ANSWER: B

Objective # 81
Task: Install main printed circuit board

Code: F-015-7-C1
184. Another name for the main printed circuit board is the:
A. motherboard.
B. encoder board.
C. analog board.
D. logic board.
ANSWER: A

Code: F-015-9-C1
185. A chemical change in which the metal plating of the pins and sockets on a printed circuit board are eaten away is called:
A. deterioration.
B. corrosion.
C. rusting.
D. abrasion.
ANSWER: B

Objective # 82
Task: Install power supply printed circuit board

Code: F-016-1-A1
186. Caution should be taken when installing the power supply printed circuit board because lethal voltage is present:
A. at all times.
B. when two components are shorted.
C. if the AC power cord is connected.
D. only when the equipment is powered up.
ANSWER: C

Code: F-016-1-C1
187. The first thing to do when preparing to remove the power supply printed circuit board is to remove the:
A. cover.
B. peripheral cables.
C. power cable.
D. mechanical assemblies.
ANSWER: C

Objective # 83
Task: Install drive motor

Code: F-017-3-C1
188. When removing a drive motor the drive belt adjusting nut is loosened to:
A. remove motor mounting screws.
B. access the mechanical assembly.
C. adjust motor speed.
D. relieve belt tension.
ANSWER: D

Code: F-017-1-C1
189. When installing the drive motor there are two methods for determining motor speed, a disk speed program and:
A. tachometer reading.
B. eye ball adjustment.
C. oscilloscope reading.
D. timing marks on strobe disk.
ANSWER: D

Code: F-017-2-C1
190. The disk drive motor rotates at about how many rpm's?
A. 3
B. 30
C. 300
D. 3000
ANSWER: C

Objective # 84
Task: Install print hammer

Code: F-018-2-C1
191. The purpose of the print hammer is to:
A. print the letter impression.
B. advance the ribbon.
C. strike the daisy wheel arm.
D. position the daisy wheel.
ANSWER: C

Code: F-018-3-C1
192. When removing the print hammer from the print hammer assembly, the technique should take care to hold what in place:
A. hammer adjusting screws.
B. print head assembly.
C. hammer set screws.
D. hammer spring.
ANSWER: D

Objective # 85
Task: Install print mechanism
Code: F-019-6-C1
193. The purpose of the print mechanism is to:
A. create printed character.
B. move carriage assembly.
C. advance paper.
D. provide power.
ANSWER: A

Code: F-019-2-C1
194. There are three basic types of print mechanisms, the ball, daisy wheel and:
A. dot matrix head.
B. wire type.
C. stencil.
D. read/write head.
ANSWER: A

Objective # 86
Task: Install carriage assembly

Code: F-020-8-C1
195. The printer carriage assembly parallel movement is usually guided by the:
A. mechanical assembly.
B. platen.
C. drive belt.
D. support rails.
ANSWER: D

Code: F-020-5-C1
196. Which board is usually a part of a new printer carriage asssembly?
A. Logic
B. Encoder
C. Analog
D. Motherboard
ANSWER: B

Objective # 87
Task: Install power feed assembly

Code: F-021-4-C1
197. The two basic types of printer paper feed assembly are the friction feed and the:
A. roller feed.
B. pin/tractor feed.
C. free-wheel.
D. hand feed.
ANSWER: B

Code: F-021-5-C1
198. The main purpose of the platen is to:
A. feed the paper.
B. align the paper.
C. backstop for ribbon.
D. backstop for print mechanism.
ANSWER: D

Objective # 88
Task: Install drive indicator light

Code: F-022-3-C1
199. Most drive indicators lights in current drives are what type of light?
A. LED
B. Socket plug
C. Bayonet prong
D. Twist base
ANSWER: A

Code: F-022-10-C1
200. The main purpose of the drive indicator light is to indicate that the drive is:
A. turned on.
B. engaged (working).
C. under warranty.
D. functional.
ANSWER: B

Objective # 89
Task: Install peripheral connection cables

Code: F-023-2-C1
201. The two most common types of peripheral cable connectors are edge-cord and:
A. grounded plug.
B. jack.
C. pin.
D. screw in.
ANSWER: C

Code: F-023-3-C1
202. When installing a peripheral connection cable and resistance is felt, the technician should:
A. push harder.
B. wiggle the connector.
C. remove and check connector.
D. apply lubricant.
ANSWER: C

Objective # 90
Task: Install peripheral connections

Code: F-024-4-C1
203. Two types of peripheral connection parts are soldered and:
A. plug-in.
B. screw-in.
C. snap-on.
D. piggy-back.
ANSWER: A

Code: F-024-5B-C1
204. When removing a soldered connection part, use how much heat?
A. As much as possible
B. None at all
C. Just enough to melt the solder
D. Very little
ANSWER: C

Objective # 91
Task: Install circuit/language cards

Code: F-025-4-C1
205. When removing a circuit/language card the technique should grasp the:
A. largest component on card.
B. bottom edge of the card.
C. top edge of the card.
D. the card connector.
ANSWER: C

Code: F-025-6-C1
206. When connecting the cables to the language card the technician should:
A. push the connector down as hard as possible.
B. wiggle the connector down.
C. push the connector gently but firmly.
D. offset the pins in the socket by 1 pin.
ANSWER: C

Objective # 92
Task: Install modem coupler

Code: 026-4A-C1
207. A modem shich interprets audio signals via a telephone handset is called a:
A. duplex modem.
B. telephone modem.
C. direct modem.
D. acoustic modem.
ANSWER: D

Code: F-026-3-C1
208. To test if the modem is transmitting and receiving the technician can conduct a self-test or a:
A. echo test.
B. flow test.
C. vom test.
D. oscilloscope test.
ANSWER: A

Objective # 93
Task: Install tape transport assembly
Code: F-027-4-C1
209. The function of the capstan in the tape transport assembly is to:
A. read data.
B. write data.
C. move tape.
D. supply tape.
ANSWER: C

Code: F-027-8-C1
210. The tape transport assembly component which holds the tape against the capstan is called the:
A. take-up spindle.
B. stepper motor.
C. erase head.
D. pinch roller.
ANSWER: D

Objective # 94
Task: Install read/write/verify head

Code: F-028-8-C1
211. The device which carries the read/write/verify head back and forth over the disk is called the:
A. transport system.
B. carriage.
C. holder.
D. capstan.
ANSWER: B

Code: F-028-4-C1
212. To move heads to an accessible position the technician should put the record in what mode?
A. Rewind
B. Play
C. Fast forward
D. Record
ANSWER: D

Objective # 95
Task: Install modem set switch

Code: F-029-9-C1
213. The modem set switch may be set on either full-duplex or:
A. one-eighth duplex.
B. one quarter duplex.
C. half duplex.
D. three-quarter duplex.
ANSWER: C

Code: F-029-9-C1
214. When the modem is operating in full duplex the computer:
A. transmits only.
B. sends only.
C. sends and transmit.
D. repeats characters on screen.
ANSWER: C

Objective # 96
Task: Install ribbon assembly.

Code: F-030-1-C1
215. The two basic types of ribbon assemblies are cartridge and:
A. multi-strike.
B. reusable.
C. reel to reel.
D. direct drive.
ANSWER: C

Code: F-030-5-C1
216. When installing the ribbon always make sure the:
A. power is off and power cable is removed.
B. print mechanism is removed from printer.
C. paper is load in printer.
D. ribbon is between print mechanism and planten.
ANSWER: D

Objective # 97
Task: Install drive belt.
Code: F-031-5-C1
217. If a belt is slipping but the tension is correct, check for:
A. oil on the belt.
B. to large of belt.
C. to small of belt.
D. faulty drive motor.
ANSWER: A

Code: F-031-4-C1
218. It is important when installing a drive belt that the belt is seated where on the pulley?
A. On top
B. In center
C. Slightly to the left
D. Slightly to the right
ANSWER: B

Code: F-031-3-C1
219. A slightly cracked drive belt should be:
A. replaced.
B. dressed.
C. turned over.
D. tightened.
ANSWER: A

Objective # 98
Task: Install AC input connections.
Code: F-032-1-C1
220. An AC power cord with the outer cover cracked or frayed, should be:
A. taped with electricians tape.
B. left alone-no danger exsists.
C. replaced immediately.
D. replaced when internal wires are visable.
ANSWER: C

Code: F-032-2-C1
221. The two main types of AC plug connectors are a grounded plug and a:
A. ungrounded plug.
B. polorized plug.
C. phillips plug.
D. jack plug.
ANSWER: B

Code: F-032-3-C1
222. A polorized AC input socket is easily identified because:
A. its the only kind made.
B. it has a ground plug hole.
C. one slot is larger than the other.
D. both slots are the same size.
ANSWER: C

Objective # 99
Task: Install fuse holders and fuses.

Code: F-033-3-C1
223. A corroded fuse holder should be:
A. replaced immediately.
B. cleaned and connections checked.
C. left alone until problems occur.
D. cleaned and replaced.
ANSWER: B

Code: F-033-5-C1
224. A blown fuse with discolored glass indicates that the power overload was:
A. gradual causing smoke.
B. due to old age of fuse.
C. quick and violent.
D. not a problem.
ANSWER: C

Objective # 100
Task: Install ejector mechanism.

Code: F-034-3-C1
225. The purpose of the ejector block tab is to:
A. push the disk out.
B. latch the ejector blocking place.
C. releases the retainer spring.
D. start the drive motor.
ANSWER: B

Code: F-034-6-C1
226. A common obstruction which keeps the ejector mechanism from ejecting the disk is:
A. grease or oil.
B. loose write protect tab.
C. accumulated hair.
D. children's toys.
ANSWER: B

Code: F-034-5-C1
227. A streched or bent return spring will result in what type of ejector?
A. Partial
B. Forceful
C. None
D. Smooth, easy
ANSWER: A

Objective # 101
Task: Install cathode ray tube.

Code: F-035-3-C1
228. The flyback transformer on a cathod ray tube can contain up to how many volts?
A. 110
B. 1,000
C. 5,000
D. 15,000
ANSWER: D

Code: F-035-31-83
229. The first thing the technician should do after removing the monitor cover is to:
A. touch transformer to discharge static.
B. remove yoke clamp.
C. remove ring magnet.
D. discharge flyback transformer.
ANSWER: D

Objective # 102
Task: Install configuration switches.

Code: F-036-3-C1
230. When removing a configuration switch the technician should always:
A. remove all wires and then mark them.
B. mark all wires before removing.
C. leave wire connected to old switch.
D. install new wires with new switch.
ANSWER: B

Code: F-036-3-C1
231. Configuration switches are usually retained by a:
A. weld.
B. solder joint.
C. retaining screws.
D. retaining latches.
ANSWER: C

Objective # 103
Task: Install peripheral controls.

Code: F-037-2-C1
232. Peripheral controls cable connectors usually are retained by:
A. a metal strap.
B. retaining latches.
C. nothing.
D. solder joint.
ANSWER: B

Code: F-037-3-C1
233. The main function of a peripheral control is to provide control between the peripheral equipment and the:
A. remote terminal.
B. central processing unit.
C. modem.
D. operator.
ANSWER: B

Objective # 104
Task: Install data communication adapter.

Code: F-038-3-C1
234. A device which allows communication between the central processing unit and modem is called a data communication:
A. interpretor.
B. adapter.
C. connector.
D. plug.
ANSWER: B

Code: F-038-3-C1
235. The three basic styles of data communication adapter connectors are, card edge, jack plug and:
A. pin.
B. wire.
C. belt.
D. strap.
ANSWER: A

Objective # 105
Task: Install expansion memory.

Code: F-039-3-C1
236. The three basic designs of memory expansion are integrated circuit chip, memory card and memory:
A. switch.
B. circuit.
C. slot.
D. cartridge.
ANSWER: D

Code: F-039-1-C1
237. When installing expansion memory, it is important to:
A. ground yourself before touching expansion memory.
B. upgrade memory as much as posible.
C. upgrade ROM memory.
D. Remove old memory device.
ANSWER: A

Objective # 106
Task: Install main memory
Code: F-040-2-C1
238. RAM stands for:
A. read access memory.
B. random accumulated memory.
C. random access memory.
D. read accumulated memory.
ANSWER: C

Code: F-040-5-C1
239. ROM stands for:
A. randomly obtained memory.
B. read one memory.
C. randomly occuring memory.
D. read only memory.
ANSWER: D

Code: F-040-7-C1
240. The permanent memory in the computer is the:
A. ROM.
B. RAM.
C. MOS.
D. MAS.
ANSWER: A

Objective # 107
Task: Install field type product line
Code: F-041-2-C1
241. A field type product line installation is generally performed as a system:
A. repair.
B. expansion.
C. upgrade.
D. renewal.
ANSWER: C

Objective # 108
Task: Install remote terminals
Code: F-042-1-C1
242. The main components of a remote terminal are the monitor, keyboard, storage device and:
A. data communication device.
B. optic scanner.
C. file cabinets.
D. central processing unit.
ANSWER: A

Code: F-042-2-C1
243. A computing set up which allows the receiving and transmitting of data from a location away from the main central processing device is called a:
A. peripheral exchange.
B. data communicator.
C. remote terminal.
D. telephone.
ANSWER: C

Objective # 109
Task: Install electrical wiring

Code: F-043-6-A1
244. When working with electricity it is important to ground yourself because the human body:
A. is a good conductor of electricity.
B. is a poor conductor of electricity.
C. resists the flow of electricity.
D. will retain the electrical change.
ANSWER: A

Code: F-043-3-C1
245. When installing electrical wiring for computer equipment, other electrical needs must be considered to prevent:
A. power surges.
B. wire tapping.
C. wire relocation.
D. extra work.
ANSWER: A

Code: F-043-6-C1
246. Which of the following test equipment is <u>not</u> used to check power at a AC receptacle?
A. Continuity tester
B. Voltmeter
C. Ohm milliameter
D. Logic probe
ANSWER: D

Objective # 110
Task: Install keys on keyboard

Code: F-044-1-C1
247. The three basic types of keyboard keyswitches are screw-on, snap-on and:
A. sealed.
B. molded.
C. rocker.
D. toggle.
ANSWER: A

Code: F-044-3-C1
248. If a key on a sealed keyboard goes bad the technician must:
A. desolder the switch.
B. unscrew the switch.
C. replace the keyboard assembly.
D. attach a jumper wire over switch.
ANSWER: C

Objective # 111
Task: Repair keyboard

Code: F-045-4-C1
249. The function of the keyboard is to allow what with the computer?
A. Calculation
B. Visual display
C. Data storage
D. Interaction
ANSWER: D

Code: F-045-2A-C1
250. The keyswitch assembly on the memoryboard consists of a key contact, base, spring and:
A. cap/cover.
B. decoder chip.
C. cable connectors.
D. message wires.
ANSWER: A

Objective # 112
Task: Repair motherboard

Code: F-046-2I-C1
251. An electrical component which takes an AC input and produces a pulsating DC output is called a:
A. transistor.
B. rectifier.
C. diode.
D. resistor.
ANSWER: B

Code: F-046-2A-C1
252. When identifying a resistor from a diode the major difference is the:
A. location.
B. size.
C. shape.
D. number of bands.
ANSWER: D

Objective # 113
Task: Repair analog board

Code: F-047-2M-C1
253. When repairing an analog board, VDG refers to:
A. Voltage Distribution Ground.
B. Video Display Ground.
C. Voltage Directed Generator.
D. Video Display Generator.
ANSWER: D

Code: F-047-2K-C1
254. A device which converts computer signals to video signals is called a:
A. RF modulator.
B. convertor.
C. transistor.
D. multiplexer.
ANSWER: A

Objective # 114
Task: Repair disk drive assembly

Code: F-048-2C-C1
255. A device which holds the disk hub against the spindle is called the:
A. head load arm.
B. head carriage.
C. head load pad.
D. magnetic head.
ANSWER: C

Code: F-048-2I-C1
256. A device which provides the disk drive with a reference once during each revolution of the disk is called:
A. activity light indicator.
B. index sector light.
C. write-protect light.
D. clamping hub.
ANSWER: B

Objective # 115
Task: Repair logic assembly

Code: F-049-2H-C1
257. A solder path which carries signals from one component to another is called a:
A. volt.
B. ohms.
C. farad.
D. trace.
ANSWER: D

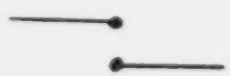
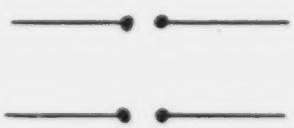
Objective # 116
Task: Repair on-off switch

Code: F-050-4-C1
258. The electricity isolated switch in most applications, can be tested for malfunction by:
A. shortening the contacts to a chassis ground.
B. throwing a high DC-voltage across it.
C. using a multimeter or any other continuant device across its contacts.
D. flipping switch a couple of times and see if that helps.
ANSWER: C

Code: F-050-3-C1
259. When replacing a defective switch:

A. use the proper color code.
B. use the properly rated replacement or equivelent.
C. use a cheap underrated switch.
D. jumper the switch with a wire.
ANSWER: B

Code: F-050-2-C2
260. Match the switch symbol withe switch type.

Switch Symbol	Switch Type
1. 	a. Dip-Pole Double-Throw
2.	b. Single-Pole Double-Throw
3.	c. Double-Throw Double-Throw
	d. Double-Pole Single -Throw
4. 	e. Double-Pole Double Throw
	f. Single-Pole Single-Throw

ANSWERS: 1-f, 2-b, 3-d, 4-e

Objective # 117
Task: Repair mechanical assembly

Code: F-051-2-C1
261. Match the mechanical component with component function

Mechanical Component	Component Function
1. Bearing	a. A rotating or sliding piece that imparts motion to a roller moving against its edge.
2. Cam	b. A device that supports guides, and reduces friction between fixed and moving parts
3. Gear	c. Removable cylindrical lining for an opening or serve as a guide.
4. Bushing	d. A toothed element that meshes with another toothed element to transmit motion.
5. Pulley	e. A strip of flexible material used to transfer power from one point to another.
	f. A sheave or small wheel wheel with a grooved rim.

ANSWERS: 1-b, 2-a, 3-d, 4-c, 5-f

Code: F-051-3-C1
262. A worn bent or broken mechanical part should be:
A. lubricated.
B. adjusted.
C. replaced.
D. aligned.
ANSWER: C

Objective # 118
Task: Repair printed circuit board.

Code: F-052-4-C1
263. Tools commonly used to troubleshoot printed circuit boards are
A. oscilliscope, multimeter, schematics, and special equipment and tools.
B. grip-vise, screwdriver and oscilloscope.
C. drill, saw, wire cutters and soldering iron.
D. knife, pliers, schematic and magnetic screwdriver.
ANSWER: A

Code: F-052-2-C1
264. Match the electrical component with electrical functions.

Electrical Component	Component Function
1. Diode	a. Contains many circuits and components on a small silicon chip.
2. Traces	b. Allows current flow in one direction.
3. Cables and cable connectors	c. Artwork on printed circuit cards that take the place of wires.
4. Integrated circuit chip	d. Carries signal voltages between printed circuit cards to other cards or circuit locations.
5. Resistor	e. Inhibits the flow of electrical current.
	f. Located on one edge of printed circuit card connectable to back or front plane.
	g. Filters AC components.

ANSWERS: 1-b, 2-c, 3-d, 4-a, 5-e

Objective # 119
Task: Repair drive motor.

Code: F-053-2-C1
265. Match the motor component with component function.

Motor Component	Component Function
1. Electrical connections	a. Metal plates in which the motor windings encircle.
2. Brushes	b. Holds motor in place.
3. Motor mounts	c. Passses current to motor windings
4. Windings/wrappings	d. External wiring connection to ac power source.
5. Stator	e. Internal wires wrapped around stator
	f. Helps start motor
	g. Provides mechanical motion

ANSWER: 1-d, 2-c, 3-b, 4-e, 5-a

Code: F-053-20-C1
266. The purpose of the motor shaft is to:
A. hold the motor straight.
B. transfer electrical motion to mechanical.
C. provide a ground for the motor.
D. hold on to while mounting the motor.
ANSWER: B

Code: F-053-2C-C1
267. The part of the motor that when energized causes the motor shaft to rotate is called the motor:

A. brushes
B. permanent magnet
C. windings
D. potentiometer
ANSWER: C

Objective #120
Task: Repair carriage assembly.

Code: F-054-2-C1
268. The main purpose of the carriage assembly is to:

A. feed the paper.
B. print the characters.
C. provide power to printer.
D. provide motion to print head.
ANSWER: D

Code: F-054-2-C1
269. Match the carriage assembly parts to the assembly part function.

Carriage Assembly Parts	Assembly Part Function
1. Carriage support rails	a. Guides and moves carriage assembly cable.
2. Carriage	b. Guides the carriage assembly in a parrallel motion to the printer planter.
3. Pulleys	c. Provides the motion to move the carriage assembly.
4. Carriage stop sensor	d. Provide the carriage assembly a vertical motion to the printer planten.
5. Stepper motor	e. Provides a resting place for the ribbon and print mechanism.
	f. Indicates to the printer when the carriage has reached its inside limits.
	g. Indicates when the carriage has reached its limits.

ANSWERS: 1-b, 2-e, 3-a, 4-g, 5-c

Code: F-054-2-C1
270. Match the carriage components with component functions.

Carriage Component	Component Functions
1. Margin sensor	a. Determine electronically the R-L margin stops.
2. Pulley	b. Moves carriage from left to right.
3. Stepper motor	c. Motor that moves a pre-determined distances.
4. Support rail wheels	d. Rollers that hold the carriage on railing.
5. Carriage	e. Carries signals and voltages to the printer.
	f. Carries the print mechanism across paper surface.
	g. Enables power supply to be regulated.

ANSWERS: 1-a, 2-b, 3-c, 4-d, 5-f

Code: F-054-3-C1
271. Match of printer components with component function.

Printer Components	Component Functions
1. Platen	a. Exerts a force on a surface by means of a spring.
2. Platen drive gear	b. Gear that moves platen.
3. Tractor drive wheel	c. Surface that hammer or print ball strikes.
4. Spring loaded pressure roller	d. Moves paper through platen.
	e. Rotates predeterminded distances by electro magnetic inductance.
	f. Inked surfaced that ball or hammer strikes.

ANSWERS: 1-c, 2-b, 3-d, 4-a

Objective # 121
Task: Repair paper feed assembly

Code: F-055-4-C1
272. The major difference between a pin feed and a friction feed printer is that the pin feed uses what kind of paper?
A. Color
B. Continous
C. Single sheet
D. Thick
ANSWER: B

Objective # 122
Task: Repair circuit/language card.

Code: F-056-1-C1
273. Which of the following functions does the circuit language card not do?
A. Allows communication between processor and peripheral unit.
B. Checks parity of all interface between CPU and memory.
C. Ability to communicate the proper signals for different programming languages.
D. Software application programs Cobol, Pascal, or Fortran can communicate with CPU.
ANSWER: B

Code: F-056-2B-C1
274. A device deliberately designed for providing a known amount of capacitance in a circuit is called a:
A. capacitor
B. buffer
C. convertor
D. diode
ANSWER: A

Objective # 123
Task: Repair tape transport assembly.

Code: F-057-1-C1
275. Some computer systems use tape/cassette recorders for what type of storage?
A. Video/graphics
B. Audio/sound
C. Data/programs
D. Electric/power
ANSWER: C

Code: F-057-2-C1
276. Match the tape transport component with component function.

Tape Transport Component	Component Function
1. Supply spindle	a. Wheel that tape is taken from.
2. Pinch roller	b. Moves tape by contact of two or more rollers.
3. Erase head	c. High speed motor that moves tape in a controlled regulated speed.
4. Capstan motor	d. A chamber were excess is looped for maximum speed by vacuum.
5. Take up spindle	e. Tape is received and collected on a reel after passing the head.
	f. Supplies a direct or alternating current that removes any information already on tape.

ANSWERS: 1-a, 2-b, 3-f, 4-d, 5-e

Objective # 124
Task: Repair print mechanism.

Code: F-058-1-C1
277. Which of the print mechanisms below is not a valid mechanism?
A. Ball or thimble print mechanism consists of position teeth and retaining latch.
B. Dot matrix print mechanisms consists of print wires, armature, return spring and solenoid.
C. Bell whistle print mechanism: consists of a bell and whistle connected by a wire.
D. Daisy-wheel print mechanism consists of a print head and print arm.
ANSWER: C

Code: F-058-2B-C1
278. A daisy wheel print mechanism is turned to the proper position (letter) by the:
A. drive motor
B. stepper motor
C. drive belt
D. carriage cable
ANSWER: B

Objective # 125
Task: Repair read/write/verify head.

Code: F-059-2B-C1
279. The electromagnetic materials through which disks are written to or read from is called the:
A. hardware
B. head
C. CRT
D. bus
ANSWER: B

Code: F-059-2-C1
280. Match the component functions with disk components.

Component Functions	Disk Component
1. Floppy disk	a. Move heads in linear motion by a magnetic motor.
2. Spindle motor	b. Holds heads as they move out over magnetic surface.
3. Stepper motor	c. Rotates magnetic media.
4. Linear motor	d. Magnetic media on which data is written.
5. Head carriage	e. Carriage holding heads positioned by a rail.
	f. Moves head predetermined distances over magnetic media.

ANSWERS: 1-d, 2-c, 3-f, 4-a, 5-b

Objective # 125
Task: Repair read/write/verify head.

Code: F-059-2-C1
281. Match the disk drive components with the component function.

Disk Drive Compnents	Component Function
1. Head carriage	a. A spring loaded lifter mechanism that causes the head to be pressed against the oxide on the disk.
2. Carriage support	b. A device designed to position the head in a track location.
3. Magnetic Head	c. Centers the disk and clamps the disk to maintain stability
4. Head Load Mechanism	d. Supports and guides the head carriage movement.
5. Stepper Motor	e. Electromagnetic device which can read, write, or erase data on a disk.
	f. Device which provides the motion which rotates the disk.
	g. Device which senses the presence or absence of a write protect tab.

ANSWERS: 1-b, 2-d, 3-e, 4-a, 5-f

Objective # 126
Task: Repair ribbon assembly.

Code: F-060-2-86
282. Match the ribbon assembly components to component function.

Ribbon Assembly Component	Component Function
1. Ribbon	a. Maintains a constant supply of ink to the ribbon.
2. Drive wheel	b. Acts as the ink carrying medium.
3. Pressure roller	c. Keeps ribbon straight track between planten and print mechanism.
4. Ribbon guide arms	d. Allows operator to remove slack from ribbon.
5. Ink cassette	e. Provides movement of ribbon
	f. Holds ribbon cassette in place
	g. Keeps ribbon pushed against the drive wheel.

ANSWERS: 1-b, 2-e, 3-g, 4-c, 5-a

Code: F-060-2A-C1
283. A re-usable ribbon is ussally made of:
A. film.
B. plastic.
C. carbon paper.
D. fabric.
ANSWER: D

Objective # 127
Task: Repair ejector mechanism.

Code: F-061-2A-C1
284. When the disk drive door is opened and the disk remains inside the drive, the problem is usually with the:

A. ejector mechanism.
B. load pad mechanism.
C. carriage support rails.
D. stepper motor.
ANSWER: A

Code: F-061-2-C1
285. Match the ejector mechanism components to the component function.

Ejector Mechanism Component	Component Function
1. Ejector block	a. Releases retainer spring when drive door is opened.
2. Return spring	b. Block which supports retainer spring.
3. Retainer spring	c. Holds ejector block in position after disk is inserted.
4. Release spring	d. Pushes ejector block forward after drive door is opened.
	e. Block which pushes disk through door opening.

ANSWERS: 1-e, 2-d, 3-c, 4-a

Objective # 128
Task: Repair peripheral control.

Code: F-062-1-C1
286. A device which allows the computer CPU to communicate with other computer equipment in a common, understandable language is called a peripheral:
A. transmitter.
B. control/interface.
C. regulator.
D. contact/connector.
ANSWER: B

Code: F-062-4-C1
287. If only one pin on a peripheral control is shorted out, the peripheral control will:
A. work as before.
B. ruin the CPU.
C. work for some functions.
D. not work.
ANSWER: D

Objective # 129
Task: Repair data communication adapter.

Code: F-063-1-C1
288. The main purpose of a data communication adapter is to allow a computer to:

A. receive and transmit data from another point.
B. interpret data being received by the computer.
C. manipulate data being sent from another point.
D. send data to a printer or disk drive.
ANSWER: A

Code: F-063-2-C1
289. A data communication adapter usually connects the computer to a:
A. printer.
B. modem.
C. disk drive.
D. monitor.
ANSWER: B

Objective # 130
Task: Repair expansion memory.

Code: F-064-1-C1
290. Expansion memory is usually provided in one of two forms, chip or:
A. disk.
B. tape.
C. cartridge.
D. interface.
ANSWER: C

Code: F-064-2-C1
291. When working with the computer memory, RAM stands for:
A. Read Accesible Memory.
B. Random Active Memory.
C. Random Access Memory.
D. Restricted Access Memory.
ANSWER: C

Objective # 131
Task: Repair memory.

Code: F-065-3-C1
292. When preparing to remove a memory chip the first thing the technician should do is to:
A. check type of socket.
B. insert chip remover.
C. desolder the chips legs.
D. ground themsives.
ANSWER: D

Objective # 132
Task: Repair field type product line.

Code: F-066-1-C1
293. Before making a field type product line repair the technician should first:
A. check equipment history file.
B. call his immediate supervisor.
C. talk to the operator.
D. read the repair manual.
ANSWER: A

Code: F-066-2-C1
294. A field type product upgrade is usually the result of a:
A. customer request.
B. manufacturing request.
C. supervisor request.
D. service technician decision.
ANSWER: B

Objective # 133
Task: Repair remote terminals.

Code: F-067-4-C1
295. The main purpose of a remote terminal is to:
A. keep main computer away from main work flow.
B. keep the main computer out of sight.
C. provide access to a computer in another location.
D. provide access to more than one computer.
ANSWER: C

Code: F-067-1-C1
296. Match the remote terminal equipment with the equipment function.

Remote Terminal Equipment	Equipment Function
1. Display screen/monitor	a. Allows data being transmitted and recieved to be viewed.
2. Keyboard	
3. Storage Device	

(cont.)

296. (cont.)

4. Card Reader
5. Data communication device.

b. Allows data entry
c. Allows data to be transmitted and received.
d. Interprets punched cards.
e. Allows data communication files to be saved and re called.
f. Creates punched cards.
g. Creates hard copies of data transmitted and received.

ANSWERS: 1-a, 2-b, 3-e, 4-d, 5-c

Objective # 134
Task: Identify intregrated circuit chips.

Code: F-068-2-C1
297. A well marked integrated circuit chip has three important markings, the logo, batch code and:
A. suffix number.
B. prefix number.
C. code number.
D. core number.
ANSWER: D

Code: F-068-2B-C1
298. The batch code consists of the year of manufacture and the :
A. logic family.
B. logic subfamily.
C. production batch.
D. manufactures logo.
ANSWER: C

Code: F-068-2A-C1
299. The core code number consists of a logic family, logic subfamily and the:
A. function of I.C.
B. type of computer.
C. manufacturer's identification.
D. package type.
ANSWER: A

Objective # 135
Task: Identify machine components and test points.

Code: F-069-2B-C1
300. A sample of a ground test point is the:
A. component leg.
B. signal trace.
C. metal frame.
D. connector pin.
ANSWER: C

Code: F-069-2A-C1
301. A test point where a current or signal is carried is said to be:
A. hot.
B. cold.
C. ground.
D. live.
ANSWER: A

Objective # 136
Task: Set configuration switches.

Code: F-070-2-C1
302. A common name for configuration switches is what kind of switch?
A. Flip.
B. Data.
C. DIP.
D. CPU.
ANSWER: C

Code: F-070-3-C1
303. Configuration switches must be set according to what specifications?
A. Operator's
B. Host system
C. Service technician
D. Electrical
ANSWER: B

Objective # 137
Task: Set user switches.

Code: F-071-2-C1
304. User switches are sometimes refered to as DIP switches, DIP stands for:
A. Dual In-line Package.
B. Dual Integrated Programming.
C. Double Intersect Pole.
D. Digital Inlay Patterns.
ANSWER: A

Code: F-071-3-C1
305. The purpose of user switches are setting up equipment:
A. components.
B. functions.
C. timers.
D. test instruments.
ANSWER: B

Code: F-071-4-C1
306. When a DIP switch is pushed towards the number side (on) its value is:
A. 0.
B. 1.
C. 2.
D. 3.
ANSWER: B

Objective # 138
Task: Install mechanical assembly.

Code: F-072-5-C1
307. The purpose of a mechanical assembly is to provide what capabilities to the equipment:
A. power.
B. memory.
C. analysis.
D. motion.
ANSWER: D

Code: F-072-1-C1
308. Scheduling of what is most important for maintaining a functional mechanical assembly?
A. Work load
B. Operators
C. Preventive maintainance
D. Diagnostic check
ANSWER: C

Objective # 139
Task: Performs operator duties.

Code: F-073-1-C1
309. When powering up a computer system the last item turned on should be the:
A. computer.
B. disk drive.
C. printer.
D. monitor.
ANSWER: A

Code: F-073-2-C1
310. When booting (turning on) a disk drive the diskette should be:
A. in the drive with drive door closed.
B. in the drive with the drive door open.
C. on top of the disk drive.
D. in its protective jacket away from drive.
ANSWER: D

Code: F-073-3-C1
311. When loading paper into the printer and the paper does not appear by turning the feed knob the operator should:
A. turn the printer off and on several times.
B. grab paper with tweezers while depressing line feed.
C. gently push paper while turning the knob.
D. shut off printer and get new paper.
ANSWER: C

Objective # 140
Task: Realign read/write/verify head.

Code: F-074-8-C1
312. In order to read/write or verify correctly the disk drive head must be postioned where on the track?
A. Right side
B. Left side
C. Center
D. Top
ANSWER: C

Code: F-074-11-C1
313. Stepping the head in three tracks, then back to original position and out three tracks and back and then rechecking head alignment allows for:
A. head expansion due to heat.
B. head expansion due to cold.
C. inward and outward head movement.
D. has no beneficial purpose and wastes time.
ANSWER: C

Objective # 141
Task: Adjust motor speed.

Code: F-075-5-C1
314. The function of a potentiometer is to:
A. measure motor output.
B. adjust motor speed.
C. adjust motor voltage.
D. measure motor potential.
ANSWER: B

Code: F-075-6-C1
315. When a part is slipping due to motor speed, the motor speed is:
A. slow.
B. fast.
C. normal.
D. correct.
ANSWER: B

Objective # 142
Task: Check AC power source.

Code: F-076-2-C1
316. When power is not present at the outlet, the technician should first check the:
A. computer.
B. fuse box.
C. wire connections.
D. power company.
ANSWER: B

Code: F-076-4-C1
317. When testing an AC power receptacle with a voltmeter and the meter arm moves:
A. power is present.
B. power is not present.
C. ground wire is loose.
D. volt meter is bad.
ANSWER: D

Objective # 143
Task: Repair power supply.

Code: F-077-1-C1
318. Large, potentially damaging spikes of voltage or current that are generated in the power lines feeding electrical power to the power supply are called:
A. brown outs.
B. black outs.
C. transients.
D. waveforms.
ANSWER: C

Code: F-077-4-C1
319. There are two basic ways to prevent power-line problems, one is a backup power supply and the other is:
A. power line conditioners.
B. shielded cables.
C. grounded plug.
D. large I.C. chips.
ANSWER: A

Code: F-077-2-C1
320. Power supplies take 117-V ac house current and transforms it to 12-V ac which is then converted to:
A. low voltage ac.
B. high voltage ac.
C. low voltage dc.
D. high voltage dc.
ANSWER: C

Code: F-077-2-C1
321. Match the power supply components to the component function.

Power Supply Components	Component Function
1. Transformer	a. Converts low-voltage AC to rough DC.
2. Rectifier	b. Carries 117-V ac to the power supply.
3. Filter capacitor	c. Converts high-voltage AC (117V) to low-voltage AC (12V).
4. Voltage regulator	d. Converts rough DC to smooth DC, removes noise.
5. Voltage lines	

(cont.)

321. (cont.)

e. Converts low-voltage DC to rough AC.
f. Maintains constant output voltage against changes in supply voltage or load variations.
g. Converts rough AC to smooth DC.

ANSWERS: 1-c, 2-a, 3-d, 4-f, 5-b